

ABSTRACT OF THE INVENTION

The present invention efficiently stores Some embodiments store a training sequence in a communications system[[,]]. where the The stored training sequence exhibits certain desirable characteristics when used by a peak to average power constrained modulation format. In one embodiment, the invention includes selecting a set of one or more original ordered sequences is selected to have such that the set of ordered sequences has at least one desired property[[,]]. creating a A set of extended sequences, each based on an original ordered sequence is created from the original sequences by beginning with an element of an original sequence[[,]]and cyclically appending elements of the original sequence in order to obtain a desired extended sequence length[[,]], and modifying each Each extended sequence is modified using a corresponding modifying sequence, such that a training sequence can be generated from any one of the modified extended sequences, by beginning with any one element of any one modified extended sequence and taking each element of the any one sequence in order to obtain the training sequence, the Each modifying sequence being is selected so that the obtainedgenerated training sequence when modulated by a selected modulation format has the at least one desired property of the corresponding original ordered sequence.

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Some embodiments store a training sequence in a communications system. The stored training sequence exhibits certain desirable characteristics when used by a peak to average power constrained modulation format. In one embodiment, a set of original ordered sequences is selected to have at least one desired property. A set of extended sequences is created from the original sequences by beginning with an element of an original sequence and cyclically appending elements of the original sequence in order to obtain a desired extended sequence length. Each extended sequence is modified using a corresponding modifying sequence, such that a training sequence can be generated from any one of the modified extended sequences. Each modifying sequence is selected so that the generated training sequence when modulated by a selected modulation format has the at least one desired property of the corresponding original ordered sequence.